

Application No. 10/521,310

Filed: January 13, 2005

Phillips et al.

## REMARKS

### I. Status of Claims.

This application has been reviewed in light of the Office Action dated July 11, 2007. Claims 1-6, 9, 11-14, 18-21, 24, 28, 30, 31, and 44 are presently pending. Claims have been amended in a manner that is believed to overcome rejections contained in the pending Office Action. No new matter or issues are believed to be introduced by these amendments. Support for the amendments are found throughout the specification, drawings and originally filed claims.

### II. Rejection of Claims under 35 USC 112.

The Examiner rejected claims 1-6, 9, 11-14, 18-21, 24, 28, and 31 under 35 USC 112, second paragraph as being indefinite for failing to particularly point and distinctly claim the subject matter. Applicants have amended the claims to more distinctly emphasize and define Applicants' invention. Applicants respectfully request that the Examiner withdraw this rejection.

### III. Claims 1, 9, 28, and 31 rejected under 35 USC 103(a).

The Examiner rejected claims 1, 9, 28 and 31 under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 5,879,732 to Caracciolo et al. (Caracciolo) in view of U.S. Patent No. 5,902,619 to Rubow et al. (Rubow). Applicant respectfully traverses this rejection

**A. Examiner's rejection:** The Examiner stated that Caracciolo discloses a method for reducing the level of poultry contamination and disinfecting an aqueous medium substantially as claimed. The Examiner noted that the injection of ozone and chlorine into the water of Carracciolo would appear to reduce pathogens as recited in claim 31, however, the Examiner further noted that the claims differ from Caracciolo by reciting that the water or aqueous medium is treated with chloramines. The Examiner further stated that Rubow discloses that it is known in the art to utilize ozone and chloramines to aid in sterilizing or disinfecting food products including poultry. The Examiner reasoned that it would have been obvious to one skilled in the art to modify the method of Caracciolo by treating the water or aqueous medium with chloramines in view of the teachings of Rubow.

Application No. 10/521,310

Filed: January 13, 2005

Phillips et al.

**B. Teachings of Caracciolo:** Carracciolo discloses a food processing method wherein during processing, temperature of an animal carcass and atmosphere surrounding the carcass are controlled by spraying gases and a mixture of ozone and water on the carcass, directing the gases through a passage in a wall to cool a processing area, and flowing the gases into atmosphere surrounding the carcass. Preferably, the gases include ozone and cryogenic gases recycled from a cryogenic freezer. The system uses a reduced amount of fresh water by recycling water used during food processing.

**C. Teachings of Rubow:** Rubow discloses a method and apparatus for disinfection or sterilizing an article which is a food or foodstuff, or a surface of an article for contacting a food or foodstuff. According to the invention, the article is grounded and is treated with an electrically charged mist of a liquid having a redox potential and a predetermined pH. The mist is subsequently evaporated from the article.

**D. Deficiencies of cited references:** Applicants respectfully submit that the Examiner has misconstrued Rubow, which actually teaches away from the current invention. One goal of the current invention is to use monochloramine, dichloramine, or free chlorine to create a persistent antimicrobial presence in a large aqueous water reservoir (or water supply system) used for food processing where the aqueous medium contains a high load of organic content (e.g. from the prolonged immersion of chicken carcasses in a chilling tank). This is contrary to the disclosure of Rubow, which discloses an electrically charged spray with a high redox potential designed to kill bacteria as quickly as possible, preferably on contact, and is intended for use as a surface disinfectant. The method of disinfection disclosed by Rubow is captured in claim 1 of Rubow. Claim 1 of Rubow is as follows:

- "1) A method for disinfecting or sterilizing an article comprising a food or foodstuff, or a surface of an article for contacting a food or foodstuff, comprising the steps of:  
electrically grounding the article;  
obtaining a sterilizing liquid having a redox potential  
which makes the liquid an oxidizing agent or reducing  
agent and a predetermined pH;  
disintegrating or atomizing the sterilizing liquid under  
pressure to form a mist and imparting to the mist an  
electrical potential;  
 exposing the grounded article to the mist causing a thin

Application No. 10/521,310  
 Filed: January 13, 2005  
 Phillips et al.

homogeneous film of liquid to form on a surface of the article, thereby sterilizing or disinfecting the surface; and removing the mist from the article (Emphasis added)."

Rubow alone or in combination with Carracciolo neither teaches nor suggests "[a] method for reducing the level of poultry contamination resulting from the processing of poultry, wherein the processing of poultry includes the processing steps of scalding, picking, eviscerating, washing, rinsing and chilling said poultry, the method for reducing the level of poultry contamination comprising the steps of: adding chloramines as a disinfectant to process water used in at least one processing steps forming a disinfected process water..." as Applicants have disclosed and claimed. Applicants' claimed invention is not directed to a process of electrically grounding a food article (e.g. a chicken carcass) and applying either a positive or negative electric potential to an aqueous medium. Nor is it directed to a method of adding chloramines to an aqueous medium for the purpose of generating a re-dox potential in such an electrically charged aqueous medium. Applicants' invention does not use a process of atomizing said electrically charged aqueous medium to form a mist for spraying on a food article as Rubow discloses.

In his rejection the Examiner has cited Claim 12 of Rubow as prior art, which states as follows:

"12) The method in accordance with claim 1, wherein the redox potential is generated or created by controlled dissolution into the liquid of an agent selected from the group consisting of hydrogen peroxide, chlorine gas, hypochlorous acid, hypochlorite ions in alkaline solutions or liquids, chloramine and mixtures thereof (emphasis added)."

Contrary to the Examiner's assertion, the use of chloramines for their ability to generate a redox potential in an electrically charged aqueous medium does not suggest their use as antimicrobial agents in a large reservoir of aqueous media as Applicants have disclosed and claimed. Rubow actually teaches away from the use of chloramines as they are not believed to be of exceptional utility. Rubow states that ozone is the preferred ingredient, not chloramine. Rubow discloses the following principles:

"The choice of redox potential generating ingredients can be crucial to the importance of use of this invention, and experiments have shown that ozone has a faster effect than the use of hydrogen peroxide, chlorine gas,

Application No. 10/521,310

Filed: January 13, 2005

Phillips et al.

hypochlorous acid, hypochlorite ions in alkaline solutions, and chloramine.

The bactericidal effect is about 25 times faster for ozone than for hypochlorous acid and some 2500 times faster than for hypochlorite ions in alkaline solutions. The same relationship also applies in relation to treatment for vira, spores and amoebae." Rubow (col. 11, lines 19-28), (Emphasis added.)

As Rubow discloses and teaches, ozone is a far more reactive molecule than either mono- or dichloramine, which are even less reactive than the hypochlorite ions mentioned above. The issue of reactivity and antimicrobial efficacy is clearly addressed in the background of the current invention which states in part:

"Because of its chemical characteristics, monochloramine, a slow-reacting and persistent anti-microbial agent that is not prone to react with organic matter, gained widespread use in programs designed to meet the new rules... Because of its relatively low antimicrobial efficacy, monochloramine is not generally used as a primary disinfectant in potable water treatment. The increased usage of monochloramine treatment by municipal water treatment facilities is not because of its disinfection qualities, but rather the change is taking place as part of a strategy to avoid production of THMs in drinking water. (Background instant application) (emphasis added)."

The unexpected observation of the current invention, which is not taught by any of the references cited, is that mono- and dichloramines are more effective antimicrobial agents when used in large reservoirs, or circulating systems, of aqueous media (e.g. the water in a scalding or chilling tank) for food processing because they confer their antimicrobial properties to the aqueous media for extended periods of time relative to more reactive chemical species (e.g. ozone), which are quickly consumed by the organic loads in these aqueous systems. As stated above, this observation was unanticipated by those skilled in the art because it was assumed, incorrectly, that the more reactive chemical species would also provide a strong antimicrobial effect in the high organic load environment of food process waters.

Since the method within Applicants' claimed invention is not found or suggested anywhere within the art, it appears that in creating his obviousness rejection that the Examiner gleaned knowledge from Applicants' disclosure contrary to the holding of *In re McLaughlin*.

Application No. 10/521,310

Filed: January 13, 2005

Phillips et al.

Applicants respectfully request that the rejected claims be reconsidered in light of well-established legal principles, which provide,

*"That one skilled in the art is not synonymous with obviousness.... That one can reconstruct and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the reference to make the claimed invention" Ex parte Levengood, 28 USPQ 2d 1300 (Bd. Pat. App. & Inter. 1993).*

The particular combination of the cited references, which the Examiner makes, in hindsight with the benefit of Applicants' disclosure, in an attempt to arrive at the Applicants' claimed invention, is neither taught nor suggested by either reference. The references, alone or in combination, because of the differences in the features of each as discuss above, do not provide "sufficient impetus" to support the combination that the Examiner makes to effect the obviousness rejection, in fact the combined references actually teach away from Applicants' disclosed and claimed invention. In any event, the combination does not arrive at Applicants' claimed invention.

Applicants' claimed invention as set forth in claim 1 is patentably distinct from that of Rubow or Carracciolo alone or in combination as neither suggest "[a] method for reducing the level of poultry contamination resulting from the processing of poultry, wherein the processing of poultry includes the processing steps of scalding, picking, eviscerating, washing, rinsing and chilling said poultry, the method for reducing the level of poultry contamination comprising the steps of: adding chloramines as a disinfectant to process water used in at least one processing steps forming a disinfected process water...," as Applicants have disclosed and claimed.

Applicants' claimed invention as set forth in claim 9 is patentably distinct from that of Rubow or Carracciolo alone or in combination as neither suggest "...introducing chloramines to the finished water to provide antimicrobial residual; and reusing said recovered, filtered, disinfected and chlorinated aqueous medium in a poultry processing step," as Applicants have disclosed and claimed.

Application No. 10/521,310

Filed: January 13, 2005

Phillips et al.

Applicants' claimed invention as set forth in claim 28 is patentably distinct from that of Rubow or Carracciolo alone or in combination as neither suggest "...treating said aqueous medium by introduction of chloramines within said aqueous medium; and reusing said filtered recovered aqueous medium in a processing step," as Applicants have disclosed and claimed.

Applicants' claimed invention as set forth in claim 31 is patentably distinct from that of Rubow or Carracciolo alone or in combination as neither suggest "...treating said aqueous medium by the introduction of chloramines, wherein said chloramines reduce pathogens within foodstuffs," as Applicants have disclosed and claimed. Applicants respectfully request that these rejection be withdrawn.

#### **IV. Claims 2-6, 11-14, 19-21 and 24 rejected under 35 USC 103(a).**

The Examiner rejected claims 2-6, 11-14, 18-21 and 24 under 35 U.S.C. 103 (a) as being unpatentable over Caracciolo in view of Rubow and in further view of U.S. Patent No. 6,398,965 to Arba et al. (Arba). Applicant respectfully traverses this rejection

**A. Examiner's rejection:** The Examiner stated that the claims differ from the references applied by reciting that the water or aqueous medium is treated with specific chloramines, and the pH of the water or aqueous medium is controlled. The Examiner further reasoned that Arba discloses that it is known in the art of water treatment to utilize the recited chloramines at a specific pH range, to aid in disinfecting water. The Examiner stated that it would have been obvious to one skilled in the art to modify the references as applied by treating the water or aqueous medium with the recited chloramines and controlling the pH in view of the teachings of Arba to aid in disinfecting the water and that the specific chloramines ratio utilized, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific water or aqueous medium treated and results desired, absent a sufficient showing of unexpected results.

**B. Teachings of Arba:** Arba is directed to a water treatment system and process for providing high purity water. The method of Arba is noted for its ability to substantially reduce or eliminate the presence of weakly ionized and/or organic materials, including their equilibrium constituents, from water; its ability to effectively remove chloramines from water; and its ability to substantially remove the aforementioned materials while providing high resistivity water.

Application No. 10/521,310

Filed: January 13, 2005

Phillips et al.

**C. Teachings of Carracciolo:** Carracciolo discloses a food processing method wherein during processing, temperature of an animal carcass and atmosphere surrounding the carcass are controlled by spraying gases and a mixture of ozone and water on the carcass, directing the gases through a passage in a wall to cool a processing area, and flowing the gases into atmosphere surrounding the carcass. Preferably, the gases include ozone and cryogenic gases recycled from a cryogenic freezer. The system uses a reduced amount of fresh water by recycling water used during food processing.

**D. Teachings of Rubow:** Rubow discloses a method and apparatus for disinfection or sterilizing an article which is a food or foodstuff, or a surface of an article for contacting a food or foodstuff. According to the invention, the article is grounded and is treated with an electrically charged mist of a liquid having a redox potential and a predetermined pH. The mist is subsequently evaporated from the article.

**E: Deficiencies of cited references:** Applicants would respectfully point out that the Examiner has misconstrued Arba and that Arba is directed to a water treatment system and process for effectively removing chloramines from water and not as the Examiner has suggested to utilize chloramines at a specific pH range, to aid in disinfecting water. One goal of the current invention is to use monochloramine, dichloramine, or free chlorine to create a persistent antimicrobial presence in a large aqueous water reservoir (or water supply system) used for food processing where the aqueous medium contains a high load of organic content (e.g. from the prolonged immersion of chicken carcasses in a chilling tank). This is contrary to the disclosure of Arba that discloses a method for removing chloramines from treated water.

The particular combination of the cited references, which the Examiner makes, in hindsight with the benefit of Applicants' disclosure, in an attempt to arrive at the Applicant's claimed invention, is neither taught nor suggested by any of the cited references. The references, alone or in combination, because of the differences in the features of each as discuss above, do not provide "sufficient impetus" to support the combination that the Examiner makes to effect the obviousness rejection, in fact the combined references teach away from Applicants' disclosed and claimed invention. In any event, the combination does not arrive at Applicants' invention. Applicants' claimed invention is patentably distinct from that of Arba, Rubow or Carracciolo

Application No. 10/521,310  
 Filed: January 13, 2005  
 Phillips et al.

alone or in combination as none suggest “[a] method for reducing the level of poultry contamination resulting from the processing of poultry, wherein the processing of poultry includes the processing steps of scalding, picking, eviscerating, washing, rinsing and chilling said poultry, the method for reducing the level of poultry contamination comprising the steps of: adding chloramines as a disinfectant to process water used in at least one processing steps forming a disinfected process water...” as set forth in claim 1 from which the rejected claims 2-6 depend.

Applicants’ claimed invention as set forth in claim 9 from rejected claims 11-14 depend is patentably distinct from that of Arba, Rubow or Carracciolo alone or in combination as none suggest “introducing chloramines to the finished water to provide antimicrobial residual; and reusing said recovered, filtered, disinfected and chlorinated aqueous medium in a poultry processing step...”

Applicants’ claimed invention as set forth in claim 18 from rejected claims 19-21 and 24 depend is patentably distinct from that of Arba, Rubow or Carracciolo alone or in combination as none suggest “treating said recovered water with chloramines and controlling the pH of said recovered water reducing microorganisms therein; and reintroducing said treated recovered water into at least one processing step which uses heated water, whereby the combination of said treated water and said heated water reduces the level of microorganisms within said poultry. Applicants respectfully request that this rejection be withdrawn.



**RECEIVED** Application No. 10/521,310  
CENTRAL FAX CENTER Filed: January 13, 2005  
Phillips et al.  
DEC 11 2007

**CONCLUSION**

In view of the above, it is respectfully submitted that this application is in condition for allowance. Accordingly, allowance is requested.

The Commissioner is authorized to debit Deposit Account No. 50-2896 for any underpayments or to credit any over payments.

Respectfully submitted,



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